What is claimed is:

1. A transmission circuit characterized by comprising:

first and second amplification means (1, 2) for independently amplifying input signals in different transmission frequency bands, said first amplification means (1) in an ON state producing an unnecessary radiant wave in a frequency band substantially coinciding with a transmission frequency band of said second amplification means (2) in an OFF state;

first filter means (4) for extracting a component in the same frequency band as that of an unnecessary radiant wave leaking out from said second amplification means during operation of said first amplification means;

phase adjusting means (5) for adjusting a phase of an output signal from said first filter means such that the phase of the output signal from said first filter means becomes opposite to that of an unnecessary radiant wave in an output signal from said first amplification means; and

signal combining means (6) for combining an output signal from said phase adjusting means with the output signal from said first amplification means.

2. A circuit according to claim 1, further

demultiplexing means for demultiplexing the output signal from said second amplification means to output a first signal to be supplied to said first filter means and a second signal;

second filter means for extracting a desired signal from the second signal output from said demultiplexing means; and

output means for selectively outputting one of the output signals from said signal combining means and said second filter means.

3. A circuit according to claim 1, wherein

said first filter means comprises a bandpass filter, and

second filter means comprises a low-pass filter.

4. An unnecessary radiant wave suppression method comprising the steps of:

setting transmission frequency bands for a first amplifier and a second amplifier such that a frequency band of an unnecessary radiant wave produced by the first amplifier in an ON state substantially coincides with a transmission frequency band of the second amplifier in an OFF state;

extracting a component in the same frequency band as that of an unnecessary radiant wave leaking out

from the second amplifier during operation of the first amplifier;

adjusting a phase of the extracted signal component such that the phase becomes opposite to a phase of an unnecessary radiant wave in an output signal from the first amplifier; and

combining the phase-adjusted signal with the output signal from the first amplifier.

5. A method according to claim 4, further comprising the step of extracting a desired signal wave from a demultiplexed output signal from the second amplifier during operation of the second amplifier.